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Canada's Record Progress in Public Health
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Canada's Record Progress in Public Health

THE HONOURABLE PAUL MARTIN
Minister of National Health and Welfare
Ottawa, Canada

"A NEW era has opened for public health in Canada."

These were my opening words when I last spoke to this Association just four years ago. A few days earlier, Canada's National Health Program had been announced. Looking back, it is evident that public health has gone forward faster in these years than in any similar period in our history.

In 1948 Canada's needs in public health could be set out under four headings: Planning and Organization, Facilities and Equipment, Personnel, and Research. Now, in 1952, it is possible to see how effectively—in the short space of four years—the National Health Program has served to overcome these deficiencies. Before going into more detail, I shall set the scene with a few highlights.

Planning and Organization

(a) Every province has undertaken an extensive survey of its health needs.
(b) The National Sickness Survey—the most comprehensive study of its kind—has been carried out.

Facilities and Equipment

(a) 36,500 additional hospital beds provided.
(b) federal aid for the construction of nurses' residences.
(c) new clinics, health units and other services established in both rural and urban areas.
(d) substantial quantities of equipment provided to hospitals, laboratories and public health departments.

Personnel

(a) 3,600 health workers trained.
(b) 4,150 health workers added to provincial and local staffs.

Research

(a) 200 research projects approved for federal grants totalling $2,500,000.
(b) Canada's annual expenditures on health research now $3,500,000—60 per cent out of federal funds.

Presented at the fortieth annual meeting of the Canadian Public Health Association, held in the Fort Garry Hotel, Winnipeg, June 16-18, 1952, in conjunction with the first meeting of the Manitoba Public Health Association.

Now, as we enter the final stage of the first five years of this Program, there is a much clearer appreciation of its possibilities. We are able to evaluate the progress already made. We are able to plan ahead realistically. You will remember that when the National Health Program was introduced the Prime Minister stressed that it was a basic foundation measure and not a final plan. He said:

"The government hopes that the Provinces and local communities will take the fullest advantage of these grants. . . . If the hospital construction grants are fully utilized, they will make possible provision for over 40,000 additional hospital beds in Canada. *At the end of the first five-year period, the situation should be reviewed.*"

That time is near at hand, and the Government is now giving the most careful thought to its consideration of the next phase of the Program. In the light of the progress made over the past four years, we can now review the whole plan in relation to our hospital and other health needs at this time. Here I might say that, in determining policy of this kind, the Government values the views of organizations like the Canadian Public Health Association, for no group in Canada has been more closely concerned with these new developments than the members of this Association.

Our Common Concern for Health

If we were asked to prove the validity of our way of life, to establish beyond question the soundness of our society, I do not think that any better proof could be found than to single out our common concern for health.

Any family or community or nation that sets the health and well-being of its members as one of its first considerations is deserving of their respect and will win their loyal co-operation.

Four years ago, after a re-evaluation of this country's responsibilities for the preservation of its greatest asset, its human resources, the federal program of health grants began, and Canada entered a further and finer stage in its public health development.

The federal grants have not only provided better health facilities and services and stimulated the morale of public health workers, they have also enabled each province to take a fresh look at its entire health scene.

As a consequence, this Program represents more than an acceleration of health effort. It is a dramatic reorientation—with new emphasis on prevention, research and rehabilitation; and on the extension of public health services, and the training of health workers.

Federal Health Grants for One City

If time permitted, I could call the roll of achievement for the National Health Program in every province. That is not possible. Even to tell the story of what has been done through federal-provincial co-operation in this province would take too long. Let me illustrate, then, by choosing from this city of Winnipeg a few highlights of what has already been accomplished with the aid of the federal health grants.

—Hospital construction grants exceeding $860,000 have been approved for hospitals throughout this city to provide 775 additional beds.

—Thirty-five incubators for premature infants have been provided in seven Winnipeg hospitals.

—Chest X-ray equipment has been installed in five of the city's hospitals and 75,000 examinations have been carried out in industrial and other chest X-ray surveys.
—Substantial quantities of laboratory equipment have been provided for the King Edward Memorial Hospital and other laboratories.
—Federal funds of some $25,000 have been invested in the establishment of a child guidance clinic for suburban Winnipeg and the surrounding area.
—Instructional staff has been provided to the University of Manitoba for post-graduate training in psychiatry.
—Support has been given to several research projects, including an investigation of all known cases of multiple sclerosis and important studies on the processing and handling of milk.
—City health services have been strengthened by the employment of 19 additional staff for food and dairy inspection and other important public health services.
—With assistance from the federal grants and the co-operation of more than 80 Winnipeg dentists, clinical dental examinations have been given to some 18,000 school children throughout the city.

Meeting Canada's Health Needs

When we surveyed the Canadian health scene in 1948, it was evident that the people of this country were among the healthiest in the world. Canada's devoted army of public health workers was serving the nation well. In every province, vigorous efforts were being made to bring health services to the highest level possible within the limitations of provincial and municipal budgets. Nevertheless, there were certain facts that gave us cause for serious concern.

There were, in particular, four important areas in which our public health programs were deficient:

(1) In basic information about health needs and services;
(2) In facilities and equipment;
(3) In the number of trained health workers;
(4) In research.

These were among Canada's most urgent public health needs. Since the inauguration of the National Health Program, very substantial progress has been made under each of these headings. Let me briefly indicate a few of the more outstanding achievements.

(1) *Planning and Organization*

To overcome the notable lack of detailed information about Canada's health facilities and services and future health needs, the Federal Government, under the National Health Program, gave grants to enable each province to carry out a comprehensive health survey.

Eight of these reports have now been completed, covering such important fields as the following:

—Provincial and local health administration.
—Health services provided by provincial and local governments and by voluntary agencies.
—Information on hospital facilities and on prepaid hospital insurance plans.
—Medical care facilities—in terms of available personnel, costs of services and medical care insurance.
—Expenditures on health care.

All of these reports will be carefully studied as the best basis for further health action in both the provincial and federal fields.

(2) *Facilities and Equipment*

It was evident four years ago that there were serious deficiencies in health

facilities and equipment in every part of Canada. It was estimated, for example, that Canada had an overall shortage of some 60,000 hospital beds. To overcome this, a five-year target was set for 40,000 additional beds. We will exceed this objective!

Since the beginning of the National Health Program, federal aid has been approved for 433 individual hospital construction projects to provide an additional 36,500 beds. Of these, 19,300 are active treatment beds; 4,000 are for chronic and convalescent patients; and 4,200 are bassinets for infants. In addition, 3,700 new beds have been provided in tuberculosis sanatoria and 8,000 in mental institutions.

Federal aid has also been committed for the construction of nurses' residences, totalling 1,160 beds to date, so that hospitals can improve their facilities for student and staff nurses. Hospitals are also being encouraged to take a more active part in public health work through federal aid towards the establishment of outpatient departments and combined laboratories that serve a public health purpose as well as providing clinical laboratory services to the hospital itself.

In many hospitals and health centres across the country, federal grants have been used to purchase additional technical and scientific equipment.

In every province, because of the federal grants, there has been a great increase in the number of clinics for tuberculosis, cancer, mental illness, and for arthritis and rheumatism. Rural health services have been brought significantly closer to the levels of those in urban areas. There has been a wide extension of school health services and of community public health services generally. To administer these expanding activities, provincial health departments have been assisted in establishing a number of new divisions.

(3) *Personnel*

In 1948, public health authorities throughout Canada employed 3,337 full-time professional workers in five major public health fields, including physicians, public health nurses, sanitary inspectors, public health engineers and laboratory technicians.

Federal grants under the National Health Program have enabled the provinces to train 2,400 and to employ 1,150 public health workers in these five categories.

While there may be some duplication in these figures, and no account is taken of turnover, it is clear that the federal grants have done much to raise the level of training and to increase the number of public health workers in Canada. In the extensive and varied program of professional training that has been developed, federal funds have enabled 3,600 health workers to take specialized training. Because of federal assistance, 4,150 health workers have been added to provincial and local health departments.

(4) *Research*

One of the outstanding features of the federal health grants program is the effective stimulus it has given to medical and public health research in Canada. *Since the beginning of the National Health Program, more than 200 individual health research projects have been undertaken, totalling more than $2,500,000 in federal expenditures.*

While splendid research contributions had been made by the various pro-

vincial, federal, and non-governmental agencies, the National Health Program opens an exciting new chapter for health research. Canada's total annual expenditures on all types of health research before 1948 were something less than a million dollars.

This year, Canada will spend at least $3,500,000 on health research, of which about 60 per cent will be provided out of federal funds.

Under the Public Health Research Grant, $512,000 is available to the provinces for approved projects this year. Substantial research programs are also supported under other grants, notably those for mental health, tuberculosis, cancer, crippled children, venereal disease, and general public health. In addition, the grants are being used to train research workers and to survey the nation's overall research needs.

In this connection, I should mention the National Sickness Survey, undertaken with full provincial cooperation, which will provide a great body of useful information for our research workers, particularly in the public health field. This study, the results of which are now being tabulated and analysed, is the most comprehensive of its kind ever undertaken.

Special Benefits from this Program

I could go on and itemize specific achievements under the National Health Program. I could tell you about the 3,000,000 chest X-ray examinations given to Canadians last year—an increase of 300,000 over the previous year because of the federal grants.

I could tell you about the great quantities of technical and scientific equipment purchased for tuberculosis sanatoria, hospitals and public health units; the many completely new services that have been established; the mobile clinics that take essential services out into the highways and byways of this vast country; the very substantial supplies of special drugs provided free to tuberculosis sufferers in sanatoria.

Or I could detail for you the way in which the federal grants have encouraged the provinces to do more on their own account. As federal aid has made possible the development of new services, many interesting possibilities have opened up for the provinces to extend their existing programs and to explore new areas of activity.

I could outline what is being done to develop a more positive attitude to the problem of mental illness. Or I could sketch the way in which our tuberculosis control program is developing beyond the preventive, diagnostic and treatment stages to encompass the whole process of rehabilitation.

I could deal with the development of additional school health services or the new facilities and services for the care of mothers, premature babies, victims of cerebral palsy, and those suffering from cancer, multiple sclerosis and other scourges.

But to me, the most important effects of the National Health Program are intangible and cannot be measured in quantitative terms. No price can be placed on the human suffering that has been alleviated; or the new hope that has been provided to those previously condemned to hopelessness; or the better start in life made possible for thousands of the children of this nation.

The results of the first four years of the National Health Program are best recorded not in health statistics or financial tables, but in the hearts and lives of individual Canadians.

For those who serve in the rewarding field of public health, this Program has special significance. For the first time, public health workers have behind them substantial and continuing federal support for their activities. Preventive campaigns can be initiated; research projects can be planned; and community health programs can be laid out, with a new assurance of solid backing and support.

The Increasing Tempo of the Program

The outstanding health advances made possible by this federal Program were not achieved overnight. As we look back, we see a gradual but steady acceleration. In the first year it was only possible for the provinces to plan the expenditure of one-quarter of the grant moneys available. Federal aid for health on such an impressive scale was something entirely new in the Canadian health scene and it took time for the program to get under way.

During the second year, the effects of the grants on provincial health planning became more evident. By the third year, the tempo of the Program had doubled and the provinces took advantage of 53 per cent of the federal funds available. Last year, the total provincial utilization of federal moneys reached a new high of $24,000,000. For the current fiscal year—with ten months still to go—projects already approved total $26,000,000.

Through the National Health Program, sound foundations have been laid for future progress. With the aid of these grants, we have learned more about our health needs; we have built up our health facilities and equipment; we have been able to employ thousands of needed workers and to provide training for other thousands; and we have vastly speeded up research activity.

Canada's rapid growth and vast expanse present a public health problem for which no static program would be sufficient. What we need in this country is an active and imaginative plan reaching out at all times to encompass the entire population wherever they may live. Well, this is no paper program, but a live, realistic and dynamic approach to the whole problem of public health in Canada.

Future Directions for Health Progress

My Deputy Minister, Dr. G. D. W. Cameron, and the Director who administers these grants, Dr. Fred Jackson—a great citizen and public servant of the Province of Manitoba—know what this Program means to Canada's public health workers.

As they go up and down the country, and as they meet with the Dominion Council of Health and with professional organizations like this, they see at first hand how the stimulus of public interest and the support of government backing have given public health workers new opportunities for service and new conviction that in these years they are part of a great and developing movement to build whatever services are necessary to contain disease and to prevent its spread.

It is impossible for anyone to forecast with any degree of accuracy the future direction of public health advances in Canada. I would suggest, however, that much of our hope for the future lies in research. I would also look to a growing emphasis on prevention, and a closer co-ordination between all the various health

services available to our citizens. We cannot afford to divorce care of illness, on the one hand, from prevention of disease and promotion of health, on the other.

In the years ahead, there will undoubtedly be greater participation by hospitals and by practising physicians in the public health activities of the community. I am confident that more and more the common objectives of private and public health workers will bring them together—not in competition but in collaboration.

All the initiative and imagination of the professional health worker must be expended on people living within a certain social setting, with certain hospital and other health services available to them. Health must be considered in its relationship to the total pattern of our national life. The social and economic status of the individual citizen, as well as the adequacy of the health services available to him, has an intimate bearing on health.

Disease as a Denial of Freedom

It is now understood more clearly than ever before that health and welfare are indivisible. To build a healthy nation, we must first produce abundantly and then, out of the resources of all, make provision for each—so that no child will go hungry, and no needy, sick or old person will be neglected.

By any standard, Canada's public health achievements merit respect. But the ordered progress of our programs seems all the more remarkable when considered against the sombre backdrop of a world in turmoil. Because concern for the health of the citizen is so sure a mark of an enlightened society, the health worker is pre-eminently a disciple of the democratic way of life. Freedom takes on form and substance when it is seen not as something static, not as a word only, but as release from servitude to disease and ill-health.

When, in all its aspects, our way of life is weighed before the world, nothing, I think, is so convincing as the genuine and humanitarian concern shown for the health and well-being of each individual citizen.

In societies that themselves are sick, the health of the individual is of little account. In any conflict of interest that develops between the state and its members, the state comes always first. That is one reason why Communism can sometimes conquer but can never convince those nourished in the warm humanity of the civilization of the Western World.

As long as peace safeguards our progress in Canada, the years ahead will be a time for great advances for everyone who works in the field of public health. Special effort, special vision will be called for. We cannot hope that human life will ever be entirely free from defect and disease. But we can resolve that, wherever possible, illness will be prevented; and that, where it lies within our power, sound health will be restored.

To the limit of their resources, I am confident that Canada's public health workers will continue to serve their fellow-citizens with that sense of high purpose that comes from the realization of a worthwhile job well done.

A Health Educator in a City Health Department

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Medical Health Officer
Victoria-Esquimalt Health Department
Victoria, British Columbia

AS I thought of this paper—and of coming back to Manitoba—I was reminded of Dr. D. A. Stewart, the pioneer in tuberculosis treatment and control in this province, with whom I was privileged to work for two years. I thought of him because he was a fine example of the pioneer in community health education; because he saw a great need, he "sold" the community on doing something about it and, with their support and cooperation, carried on a fine tuberculosis program for many years. That is good community health education.

As public health educators, or other personnel, I presume that you are here because you have an interest in how public health educators succeed and in knowing the elements that have contributed to each one's success or failure. Accordingly, I shall try to present a description of our development and let you judge these elements for yourselves. This will be done in seven sections, relative to the planning, qualifications, selection, conditions, hazards, progress and results of our venture.

How Did We Come to Get a Public Health Educator?

There was first a realization by the staff of our inability, partly through lack of interest, to do effectively the work usually assigned to the health educator. Then we saw the fine work done by Mr. Alan Cameron and Mrs. K. Beard of the Provincial Board of Health, and read many glowing reports of the work being done elsewhere. Finally, federal grants made it possible to start our project without increasing the local budget. Briefly, that is how we came to get a health educator.

What Did We Expect of a Public Health Educator?

In our memorandum outlining the project, for which we sought approval under federal health grants late in 1948, I note that we expected him to serve the community, not just one group or a limited area within it. We stated the purpose of his work as being "to improve community health education". By community we think of Greater Victoria, with a population of 115,000 people, mostly urban and suburban, but reaching out in rural areas some 20 miles from Victoria Centre, and including several local governments and three school boards, and served by three health departments.

A second way of answering the question "What did we expect?" would be to refer you to the administrative chart submitted with our request. In this chart

Presented before the Public Health Education Section at the fortieth annual meeting of the Canadian Public Health Association, held in the Fort Garry Hotel, Winnipeg, June 16-18, 1952.

the public health educator is shown as directly responsible to the Victoria-Esquimalt Health Officer and as having direct access to the whole community—individuals, schools, clubs and various agencies; and it also suggests that he will reach them through bulletins, the press, exhibits and meetings. The public health educator is shown as having an important but direct channel to the community through the staffs of the three health departments in the area. The chart further suggests that he will work closely with the provincial public health educator whose office is in the city, and with the whole staffs of the various school boards in the district.

With all its faults and sins of omission, that was how we visualized his place within our organization four years ago.

What Sort of Person Did We Get?

You have all heard the various suggestions and arguments for and against public health educators being drawn from certain groups or classes of people, such as school teachers, newspaper reporters, salesmen and so on, then trained in public health; or, conversely, that they should be chosen from persons in the field of public health who show a special ability at putting ideas to work and gaining good community participation.

In making our selection we did not seem to have a suitable candidate from any of these groups. Instead, when the final choice was made, we had a young man who had just graduated in science (including all the pre-medical options). He was a rugby player who had done a little teaching during his university studies, but who was primarily a keen, friendly sort of person, quickly at home and accepted in any company, and who had a desire to work in some part of the medical field. We chose him on the basis of our personal estimate of his qualities rather than on his experience or academic qualifications.

Under What Circumstances Did Our Public Health Educator Get His Start?

As to ourselves first, we were not, as a group, strong in our public relations beyond that of our immediate work contacts, a statement which is true, I think, of most professional groups. We were a recently amalgamated group who were still going through a process of integration or assimilation; that is, two municipal and two school health departments had recently been fused into one.

Our public health educator came straight from university to us in February 1949 and in September went to North Carolina to study. When he came to us, he served a six months' apprenticeship, to learn about public health, and in detail what we did, and why and how. In actual practice each member of the staff, nurse, stenographer, sanitarian and doctor, helped with his preliminary or elementary education. Our public health educator was required to accompany and work with each member of the staff, helping where he was able. Finally he was given the task of completing the detailed 54-page Evaluation Schedule of the American Public Health Association. This entailed digging into endless public health records and enquiring into hospital and medical services, provincial health services and many phases of community life that might never otherwise have been observed.

I think that this introduction gave everyone a stake in his future success and in that of his whole program. This meant that, before taking his formal training

in health education, he was well acquainted with our whole community, our staff, our facilities and program. Naturally, he would have these in mind in working out projects at college and in many instances would be seeking solutions to problems with which he was already personally acquainted.

What Were Some of the Hazards That We Faced?

Some hazards that we had heard from various sources faced us in embarking on our new venture. In fact, most of these suggestions were brought up during the course of a session in Seattle about three years ago, when 20 or 25 health officers spent an evening discussing this subject. Here are some of the suggested hazards, for what they are worth:

Health educators are mostly young people who have had a one-year course and think they are experts in the medical, nursing and sanitation aspects of public health. This lack of practical experience makes them often unacceptable to established professional groups who are rendering a basic service that requires years of training.

There is a tendency on the part of health educators to by-pass the present staff and pose before the press and public as the chief source of knowledge and information. Here may I note with regret that some of even the most recent books on public health education give much space to exhibits, posters, displays, films, speeches, meetings—but very little to the work within and through other members of the staff, thereby partly encouraging this suspicion.

There is a tendency to dash off on pet projects, entirely independent of the rest of the staff; or, at the other extreme, to take over some functions better left to other members of the staff, especially in talks to local groups or in news releases. Public health educators are too interested in knowing and "contacting" the right people in their efforts at community participation—whereas the rest of the staff are concerned with those who need their services, and may regard the former activity as playing politics.

Lastly, many staff members are resentful of the new import, fearing that his coming means new and unfamiliar work which to them is rather intangible and frightening. They are perhaps quite sure that they do not want to learn new educational methods and group techniques. Most people fear the new and the strange, and, for this reason, the health educator may be given a very cold reception.

These are some of the suggested hazards.

How Has the Health Educator Functioned?

How has our public health educator actually worked since returning over a year and a half ago from his formal training? Has he carried out all the difficult assignments that the books tell us a public health educator will do? Or has he brought all the hazards that some might predict? We think that our health educator has accomplished much of the former, with a minimum of the latter.

First, to list a few general ways in which the public health educator has functioned:

Distribution of Service. As he was primarily working with, or in, two main health departments, his time was allocated proportionately and he was in each case directly responsible to the health officer in whose unit work was being done. This sharing of his time and services prevented any one group from being overwhelmed by his attentions or programs, which might be the case in a small city or average health unit.

Method. He was urged to work mostly and primarily within and through the members of our own staff—to concentrate on in-service methods of training and leadership that would improve our working relationships and our general effec-

tiveness. It has been emphasized often that the first, simplest and most effective method of presenting information and influencing people is by word of mouth—one person to another—and by this means the nurse, the sanitarian, the physician and the office staff have an amazing opportunity every day to do an effective job. But we all need help in doing that job.

Scope. The health educator was encouraged to make his secondary interests as wide in scope as the whole community and to work with and for all agencies concerned in the health of the community. The WHO definition of "health" takes in plenty of territory. And if you have delved into Buell's recent book, *Community Planning for Human Services*, you might consider our responsibility to include all four fields of human service as he discusses them under the headings of dependency, ill-health, maladjustment, and recreation. Public health educators would do well to keep this broad perspective, and our new member was encouraged to be truly a *community* health educator.

Facilities. He was given a definite budget and equipment as adequate as possible to aid in his work. Among the latter is included reference material, aids to visual education, stenographic assistance, a car allowance and an office of his own. The equipment for a public health educator may seem to be rather elaborate, but if the whole staff are encouraged and assisted to use film-strips, sound film projectors, pamphlets, reference material and posters effectively, that equipment can stretch a long way.

Control. Though the health educator's program was subject to the assessment and approval of the health officer at all times, as far as possible he was given a free rein to work out his own ideas and was subjected, as little as possible, to heavy requests from staff members to help prepare or obtain material for their use. We were anxious that no one should use him as an office assistant, as publicity agent or script writer, to the detriment of his own more general and probably more valuable work. Only with a good measure of freedom of expression could a new worker in such a field hope to discover his abilities and grow to the stature of which he was capable, though in doing so he might often overreach his grasp or stub his toe.

Some Specific Examples of How the Health Educator Has Functioned

One of our earliest staff education projects after his return was the preparation of a small brochure, entitled *Fifty Years in Public Health*, pointing out the progress that has been made during the first half of the century, both in Victoria and in the field of public health in general. This was designed primarily for distribution to schools, health and welfare agencies and similar groups in the community. The publication was somewhat hurried and not too well executed, but it had us all working together as one group for the first time, under the guidance of the health educator, thinking in terms of telling a story. To judge by the requests for extra copies (of which we have none now), the result was reasonably satisfactory.

Another Example: The subject of making annual reports attractive and readable has been much discussed of late. An effort was directed towards achieving this goal with the annual report of the Saanich and South Vancouver Island Health Unit. Extensive statistical tables were largely replaced by a narrative

report which was made up of two main sections: first, an account of a sample day in the life of various staff members and, second, a report on the highlights of the public health accomplishments during the past year. This was an excellent example of cooperative effort in which a team composed of a nurse, clerk, doctor, sanitarian and health educator, carried out the planning, composing and editing of the annual report. Most people who have seen it agree that the result was good. Its success was in no small measure attributable to the ideas and guidance given by the public health educator.

Senior Staff Meetings: Until a year and half ago, senior staff meetings were few and far between; in fact, most problems were discussed by the two or perhaps three who were concerned and it was only on rare occasions that we met as a group. Under the stimulus of the public health educator, who acts as secretary, we now meet every two weeks and sometimes oftener—a procedure that has proven extremely valuable to us all and has tied our diverse interests together in a way that nothing else could do. The senior staff meetings have also served as a group study session. Our best example to date has been our reporting on and discussion of each section of the Report on Public Health Practice in Canada with which you are all familiar. I need hardly add that such studies prove most profitable. Here again the public health educator does the basic work of organizing and keeping the study going. The same remarks apply equally to general staff meetings.

Our *Parentcraft Classes* illustrate another phase of good work on the part of the public health educator. These classes for expectant mothers and fathers had been carried on, in a small way, by the Victorian Order of Nurses for many years. Their very existence was often precarious. At the request of the V.O.N. supervisor, the health educator threw his support and ideas into this project, with the result that it was reorganized to include instructors from six community health agencies, who meet after each series to re-evaluate the content of the sessions, to consider suggestions made by parents who have attended, and to improve the teaching methods. Of equal importance was the stepping-up of publicity for the classes by informing and reminding organizations, hospitals, doctors, and so on, by letter; by making small leaflets available, and by obtaining good newspaper coverage through pictures and articles. The value and size of the classes has increased very remarkably.

Another way in which our public health educator has been very helpful is in the matter of obtaining *educational aids* for staff members and, in a sense, acting as librarian. This has improved the variety, quality and availability of special reference articles and pamphlets and has encouraged and facilitated the use of films, posters and exhibits. He has also improved our methods of using these aids, especially in group meetings.

As a means of improving understanding of the function and program of the health department, and as a piece of good public relations, the public health educator has improved and formalized our *orientation program* through which visitors from other agencies, from out of town, those referred by the provincial board of health, or other visitors, are acquainted with our whole program by members from each section of our staff. This is illustrated even better in the instruction given to students from our training hospitals who spend time with us as a regular

part of their undergraduate training. The outline of talks and charts used by each member of our senior staff has been studied and coordinated with that of each other member to avoid overlapping or omissions. This gives us a greater sense of satisfaction in meeting with these groups and also, I am sure, sends them away with a sense that their visit has been planned for them and with a better knowledge of our program.

Also we have been strongly encouraged to meet more often with *other community groups* working in the fields of education, health and welfare towards a better understanding of our mutual problems and respective programs. This has a mutually beneficial effect in that we and they are both more inclined to share our responsibilities and to refer problems to the agency best qualified to deal with them. We therefore work more efficiently and more happily and help others to do the same. The importance of good public relations is thereby stressed, both as it concerns the community we serve and those who similarly serve the community.

What Do We Think of the Result?

We think the health educator is doing a specialized task within our group and in the community that needed to be done. Public health workers in the past, without the aid of such specialists, have achieved vast improvements in sanitation, communicable disease control, infant welfare, etc., but as stated in the American Journal of Public Health of June 1948: "The health educator supplements in an organized and continuous way the work of other educators and public health workers but he replaces none of them." We think that he has supplemented the work of each member of the staff, while detracting from none of its extent or quality.

Our program, aims and methods are better understood by the community, making our work more pleasant and more effective. This is especially important with such rapid changes in emphasis and branching out into newer fields as is going on in all health departments today. Public health departments are doing more in the fields of rehabilitation, care of the aged and chronically ill, prevention of maladjustment and mental illness and even in medical care schemes, and this requires a well-informed, cooperative community. As Derryberry points out, "A different sort of educational problem faces us in securing the participation of people in programs which require more complicated procedures, greater amounts of time, and more fundamental changes in individual behaviour." Hence, an increasing need for good public health educators.

It must be admitted that everything tried by the public health educator, or by others on his suggestion, has not been successful—nor was that to be expected. Because public health educators are young, dynamic and not inhibited by tradition, by-laws, or by the "proper" things to do, they will often rush in where angels fear to tread—and perhaps wish they had stayed out. But even in our failures we have shared and learned together, so that profit has been the net result.

To summarize, then: We are doing a better job as a team within the department and as a larger team within the community because we have a public health educator. I am convinced that a little leaven like this can well be used throughout our public health departments to the benefit of all.

Mental Illness in Canada as Reflected by Mental Hospital Admissions, 1932-1947

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MENTAL illness in Canada is a subject of interest to the federal and provincial governments and to many others who deal with the health of the Canadian people. To make intelligent plans for drafting and executing mental health programs requires primarily a knowledge of the extent of the problem. In other countries such knowledge has been obtained with varying results from estimates of the incidence[1,2,3,4,5] and prevalence[6,7,8] of mental disorders. This report is an attempt to depict the situation in Canada and does not undertake to compare Canadian findings with the results of similar studies made elsewhere.

Since mental hospital statistics served as the data upon which the study was based, an outline is given of the method by which they were collected. The applications for admissions to mental institutions were accompanied by patients' histories completed on forms which differed little across the country. In one heavily populated province, for instance, they consisted of data pertaining to the patient such as age, sex, occupation, residence, education, the extent to which he used drugs or alcohol, details of any previous, as well as the present, attack of mental illness, etc. The forms were filled in by the medical practitioners from their own knowledge and/or that of the patient, his relatives or close friends. In hospital the histories were completed by physicians, with the final diagnoses being arrived at in conference. Quarterly, as a rule, data from the patients' records were transcribed to cards, probably most often by members of secretarial staffs. The cards were then forwarded to the Dominion Bureau of Statistics where the appropriate tabulations were made by hand. Not all of the mental institutions were on this "card system"; those failing to report in this manner made annual returns to the Bureau by "schedules" on which certain information relating to patients was tabulated from hospital records at the end of the calendar years. The scheduled data were less complete than those on the cards in that, for instance, patients' ages were not given. On the other hand, they possessed the merit of providing a more complete coverage of the numbers of admissions.

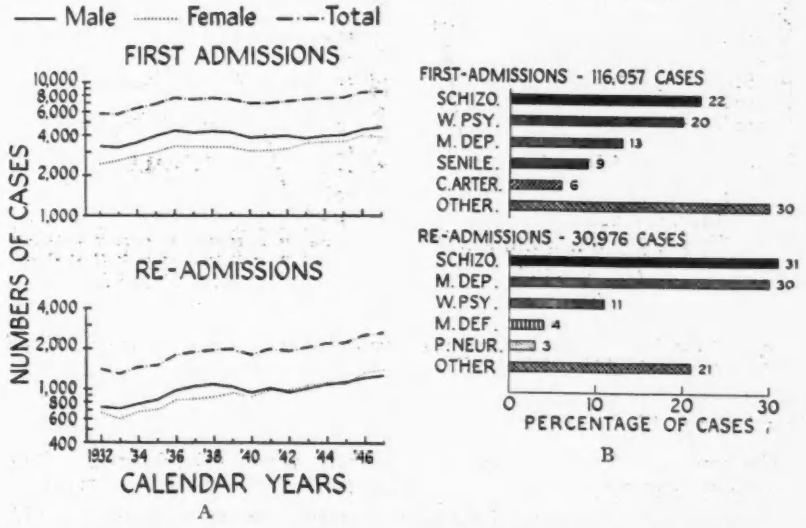
In attempting to show the picture of the changing incidence of mental illnesses through the period in question, the accepted method of using hospital admissions was employed. It consisted in ascertaining the numbers of admissions to those hospitals reporting on the card system and published by the Dominion Bureau of

Presented at the Vital and Health Statistics Section at the thirty-ninth annual meeting of the Canadian Public Health Association, held in Montreal, May 28-31, 1951, in conjunction with the annual meeting of La Société d'hygiène et de médecine préventive de la province de Québec.

Statistics in their Annual Reports of Mental Institutions. Crude as well as age-sex-specific rates per 100,000 population were computed from the general population estimates supplied by the Bureau. The crude rates were standardized on the 1931 population as established by the Census. Averages of the standardized and of the age-sex-specific rates from 1933-1937 were compared with those of 1943-1947 for the purpose of estimating changes.

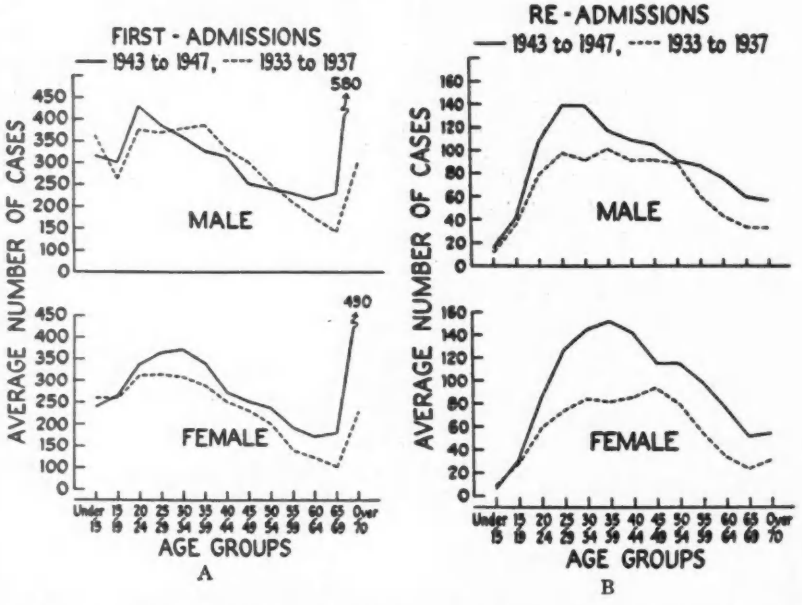
Numbers of Admissions to Canadian Mental Institutions from 1932 to 1947 Inclusive

The admissions were more numerous in 1947 than in 1932 (Figure 1A). New admissions for males increased during this period from 3,340 to 4,602 (38%) and for females from 2,434 to 3,886 (60%), giving an increase for both sexes of 47%. On the other hand, re-admissions for males went from 723 to 1,283 (77%), for females from 676 to 1,393 (106%), and for both sexes a gain of 91% was made. The numbers of males exceeded those for females for both first and re-admissions, except for the latter from 1942 onwards, when there were 4% more females (5,986) than males (5,759). The distributions of admissions by percentages according to diagnoses are given in Figure 1B, from which it is seen that schizophrenia heads the lists and accounted roughly for a quarter of all the cases in each type of admission. Illnesses designated "without psychoses" and "manic-depressive", respectively, took second place for first and re-admissions.



Figures 1A and 1B. Fig. 1A: Numbers of admissions to Canadian Mental Institutions, 1932-1947. *Fig. 1B*: Percentage distribution of admissions to Canadian Mental Institutions, 1932-1947, by diagnoses. Schizo. = schizophrenia; W. Psy. = without psychoses; M. Dep. = manic-depressive; C. Arter. = cerebral arteriosclerosis; M. Def. = mental deficiency; P. Neur. = psychoneuroses. The "without psychoses" group included alcoholism, drug addiction, disorders of personality, psychopathic personality, epilepsy, others, and mental deficiency. It is to be noted that the last condition accounted for the bulk of the cases in this group. For example, in 1947, of 1,378 total first-admissions "without psychoses", 946 (69%) were mentally defective.

The average numbers of admissions by age-groups for 1933-1937 and 1943-1947 are shown in Figures 2A and 2B. The *first-admission averages* for males decreased from the 20-24 age-group to the 60-64 age-group, while the averages for 1943-1947 were lower than those for 1933-1937 between the 30-34 to 50-54 groups. With females the 1943-1947 averages were higher than those for 1933-1937 at the different ages, with a maximum occurring at the 30-34 group. A marked increase took place in the 1943-1947 averages of males and of females for those over 65 years, rising from 231 to 580 for the former and from 181 to 490 for the latter. The *re-admission averages* for 1943-1947 at all ages were greater than those for 1933-1937, with the greatest differences occurring for males at 30-34 years and for females at 35-39 years.



Figures 2A and 2B. The average numbers of first and of re-admissions to Canadian Mental Institutions for 1943-1947 and 1933-1937.

Standardized Admission Rates

The standardized rates followed the crude rates very closely, differing in 1947 by only 4.6 and 1.5, respectively, for total first and re-admissions. The first-admission standardized rates for males (Figure 3) went from 60.8 to 67.7 (11.4%) and those for females from 47.6 to 58.2 (22.3%). The standardized re-admission rates for males made a gain from 13.2 to 19.0 (43.9%), and for females from 13.2 to 20.5 (55.3%). The *averages of the rates* for the three quinquennial periods, 1933-1937, 1938-1942 and 1943-1947, were for first-admissions: males, 67.5, 67.1 and 63.5, and females, 56.0, 55.0 and 58.0; for re-admissions: males, 15.2, 16.7 and 17.5, and females, 13.6, 15.9 and 18.4.

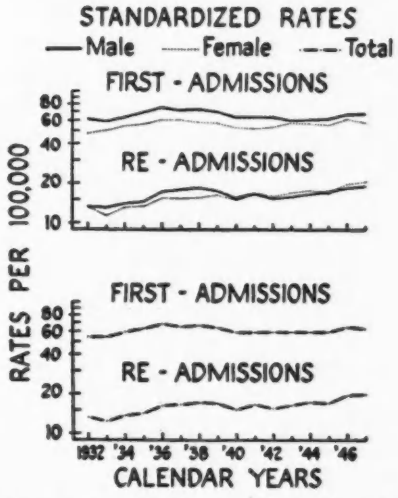
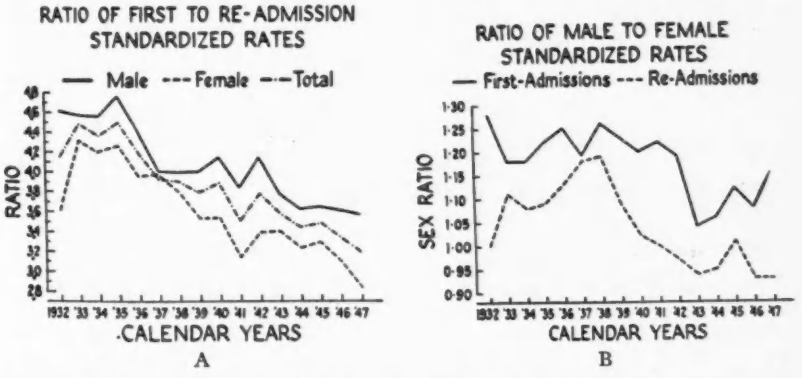


Figure 3. Standardized rates (per 100,000 population) of admission to Canadian Mental Institutions, 1932-1947.

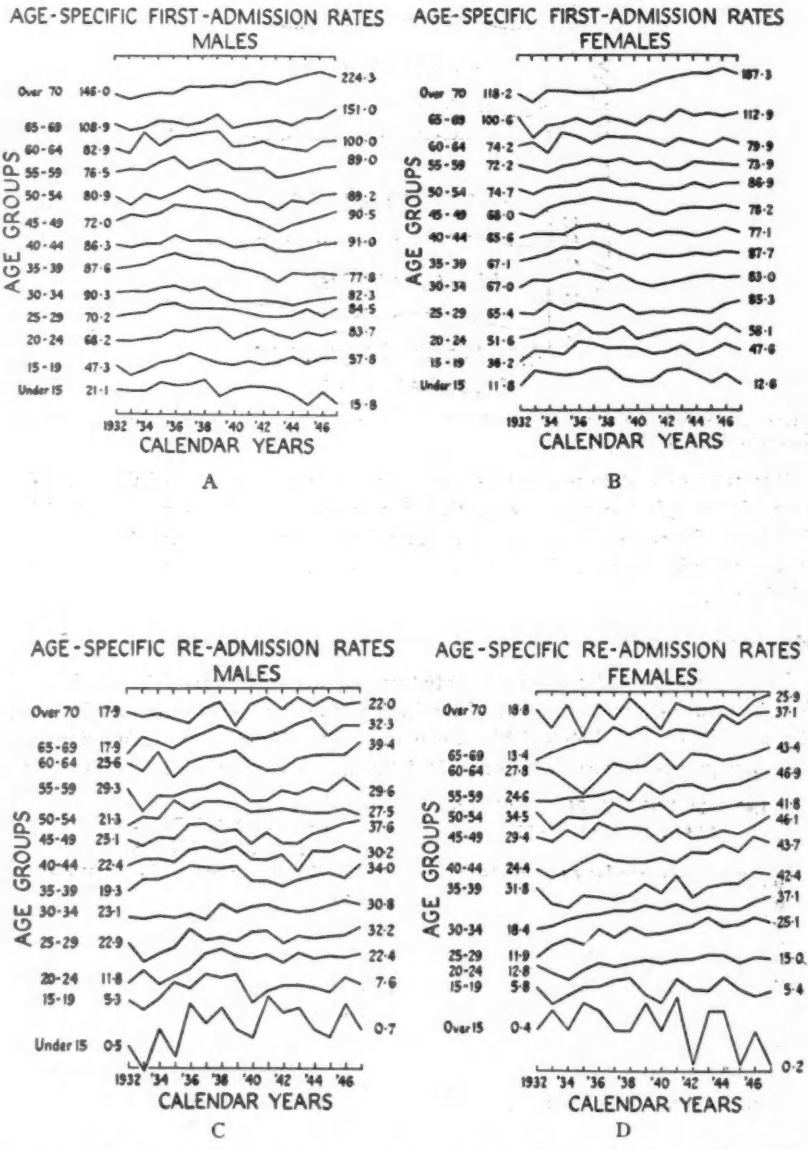
The ratio of first to re-admission standardized rates for each of the sexes decreased through the years, with that for males being greater (Figure 4A). Similarly, the ratio of male to female standardized rates (Figure 4B) declined in an irregular manner, having marked peaks at 1938 for both first and re-admissions.

Age-Specific Rates

The age-specific rates are represented graphically in Figures 5A, 5B, 5C and 5D. A feature common to most of the lines is the "humped" character between the early 1930's and 1940's. This is exemplified by the *male first-admissions* for those age-groups between 25-29 and 55-59 inclusive where the rates increased to



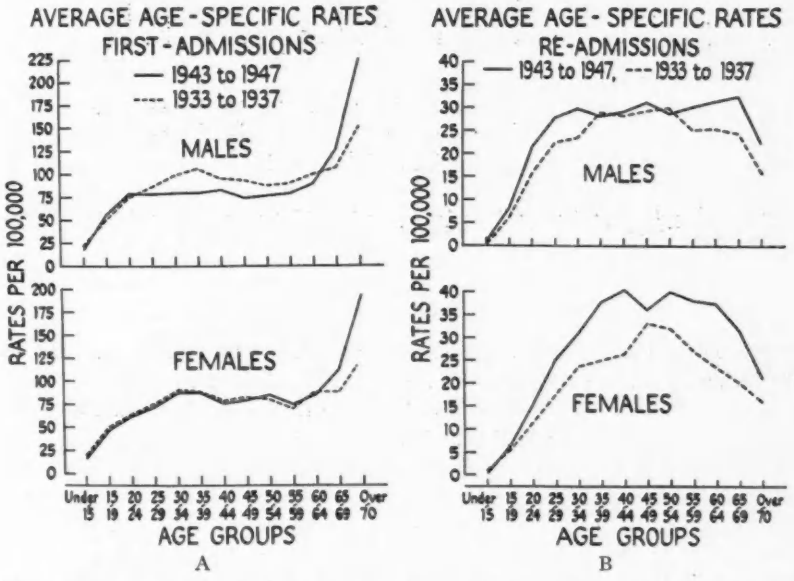
Figures 4A and 4B. The ratios of first to re-admission and the ratios of male to female standardized rates (per 100,000 population) of admission to Canadian Mental Institutions, 1932-1947.



Figures 5A, 5B, 5C and 5D. Age-sex-specific rates (per 100,000 population) of first and of re-admissions to Canadian Mental Institutions, 1932-1947.

a maximum generally in 1936 and then declined to a low in 1943, to be followed again by increases which were most marked in the middle and the older age-groups. In the age-groups 15-19 and 20-24 the trend lines were up very slightly, while in those under 15 the trend was down. The line for the 60-64 group again was humped, with a maximum rate occurring at 1939 and a low at 1945. The trend of rates for those over 64 years was up. The *female first-admission* rates followed a similar humped trend; in the 55-59 age-group a maximum was reached in 1939 with a minimum in 1942, while with the 20-24 age-group the greatest rate was at 1936 and the least at 1940. The rates for those over 64 years showed an upward trend, while the ones for those less than 20 years remained fairly constant but irregular. The *male re-admission* rates again were humped in nature as observed for first-admissions, being mostly noticeable in age-groups between 35-39 and 65-69, with maximums occurring in the late 1930's and minimums in the early 1940's. With the *female re-admission* rates the humped nature of the lines again was present but mostly in the middle-age groups.

The average age-specific rates for the terminal quinquennial periods are shown in Figures 6A and 6B. The *first-admission male averages* for the two time periods rose sharply in the lower age-groups, levelled off, and then rose again to result in a difference of 72.2 for those 70 years and over. The 1943-1947 averages were less than the ones for 1933-1937 except at ages 15-24 and 65 and over, with large differences occurring at age-groups 35-39 and 70 and over. The *first-admission female averages* for the two periods followed each other closely in a pattern similar to that for males but diverged sharply at 65-69 years, giving a difference



Figures 6A and 6B. Averages of age-sex-specific rates (per 100,000 population) of first and of re-admissions to Canadian Mental Institutions for 1943-1947 and 1933-1937.

of 71.9 in the 70 and over group. The *re-admission male averages* for the two time periods went up in the lower age-groups to 30-34, to be followed by a period of irregular averages, and then decreased from the 50-54 group for 1933-1937 and from the 65-69 group for 1943-1947. Similarly, the *re-admission female averages* rose, but in a more pointed manner, to reach a maximum for 1933-1937 in the group 45-49, and then declined. In 1943-1947 two peaks were reached in the groups 40-44 and 50-54, again before a drop. The 1943-1947 averages were greater than those for 1933-1937 in all groups except for males 35-39 and 50-54 years, and for females under 15 years when slight negative changes took place. The changes between the averages discussed above are shown in Figure 7 where the percentage increases or decreases are represented diagrammatically.

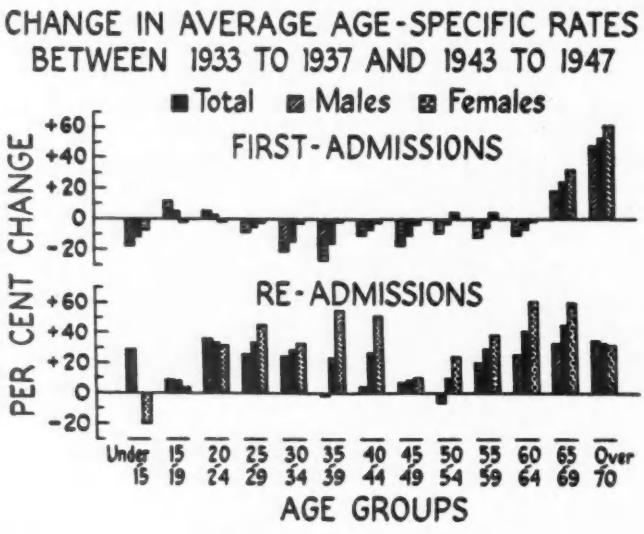


Figure 7. Changes in average age-sex-specific rates (per 100,000 population) of admission to Canadian Mental Institutions for 1943-1947 and 1933-1937.

Discussion

It is well known that the interpretation and value of the results of a study on the incidence and prevalence of disease depend fundamentally upon the soundness of the basic data. The procedures by which the present basic data were collected could bring about mistakes and errors having to do with poor preparation and presentation, first-admissions being classified as re-admissions and *vice versa*. The magnitude of these mistakes and errors is unknown but appears to be small. However, cognizance must be given to the fact that figures from institutions are compiled mainly for administrative rather than epidemiological purposes. As far back as 1938 it was noted that "Statistics of hospital populations are quite apt to suffer from administrative and legal practices which tend to vary from locality to

locality as well as in time. This dependence upon hospital statistics leads one to lean too heavily and too exclusively upon the use of proportionate morbidity as the usual type of statistical analysis, and this . . . is a dangerous practice when one uses these statistics for the purpose of inference."[9]

Mental disease has been described as "an artificial grouping of many morbid processes,"[10a] with only the epileptics, mentally defective and non-psychotic alcoholics being consistently distinguished.[10b] Thus the validity of assigning certain types of mental illnesses, e.g., schizophrenia and manic-depressive, to relative positions of importance may be questionable owing to possible variances of the diagnoses. These variances could arise from differences in diagnostic criteria used by hospitals from time to time and place to place. The extent of such possible discrepancies made in Canada down through the years is unknown but could be considerable. Indeed, such would not be surprising if one takes into account the precision by which breast cancer and certain other conditions have been diagnosed.

The admission rates discussed here can be regarded as under-estimates of the incidence of mental disorders in our country as whole, and of even those mental illnesses for which patients were admitted to mental hospitals. By including data from those hospitals reporting on the card system, certain discrepancies arise. For example in 1947, 1,257 (12.9%) of the 9,745 first-admissions and 659 (19.8%) of the 3,335 re-admissions reported by schedule were omitted. There are no published reports of those mentally ill patients who received treatment or were under care in clinics, outpatient departments and wards of general hospitals; physicians in private practice do not report their cases of mental illness. Again, hospital accommodation has not kept pace with the rising demands for care, since most of the mental institutions are over-crowded. It seems likely, therefore, that such a situation could lead to a certain amount of case selection and delays in some instances which would vary according to time and place.

Apart from these considerations are those having to do with the patient and his environment. In the United States it has been recognized that the tendency to hospitalize the mentally ill is related to the proximity of the hospital to the patient as well as the severity of his illness.[10c] While this tendency may exist in Canada, there appears to be no published supporting evidence. The economic status of the patient or his relatives does not prevent his admission to a mental hospital for treatment and care but could deter him from seeking psychiatric aid. Hospitalization may depend more upon social factors rather than those of a clinical nature. In one study[11] it was found that members of "closely knit groups" will seek treatment earlier than those of "loosely knit groups," with times varying from six months to at least three years after symptoms appeared. This could be expected if one considers that a person with an intellectual defect can often function well in one environment but not in another. The reliability of data on incidence follows that on diagnosis, and determining the time of onset of mental illnesses, such as schizophrenia, is most difficult and almost impossible[5]; it has to do in part with the question of etiology.[9] In the report of the Expert Committee on Mental Health of the World Health Organization one reads: "In the field of psychiatric disorders, the impressions of incidence gained from hospital populations and out-

patient attendances are often completely false. The Committee is of the opinion that only by sampling studies can an understanding of the true incidence of psychological disorders be obtained. The few sampling studies of this type which have been undertaken have shown that psychological disorders frequently masquerade, in the statistics of health administrations, under misleading physical diagnoses."[12]

In presenting evidence relating to the magnitude of the problem of mental illness it is felt that some reference should be made to its prevalence. It was recognized from the statistics of those hospitals reporting by schedule that "the wide field of mental illness constitutes the largest special medical and hospital problem in Canada."[13] At the beginning of 1947, 49,192 patients were in mental hospitals, 40,420 in public hospitals (i.e., public, private and Federal Government hospitals), and 11,896 in sanitoria and tuberculosis units. At the end of that year, 1947, the resident mental hospital patients numbered 50,203 or 400 per 100,000 general population. At the end of 1932 the residents numbered 33,565, giving a crude rate of 320 per 100,000. Thus, a 50 per cent increase in the numbers and a 25 per cent increase in these crude rates occurred over a period of 15 years. These statistics exclude most of those suffering from psychoneuroses and the milder forms of the other psychoses; as well, no estimates are available of the numbers of the severe types of mental disorder being cared for in the community. Judging from reports of studies made in other countries, the prevalence of such conditions in Canada could be large. Supporting statistics for this contention are meagre, the best available being those derived from army reception centres.[14] For instance, during 1944, of 114,133 males who were examined 55,801 were rejected for various reasons; those rejected on psychiatric grounds numbered 20,974, giving a rate of 1,056 per 100,000 of the 1941 male population in the 18-38 age-group.

From this discussion it is seen that estimates of incidence and prevalence of mental illness in our country by time, place and person are deficient because the data have not been collected. The available statistics, however, point directly to the situation of mass mental disease. They strongly indicate the need for studies of those factors pertaining to the individual and to his environment which bring about this phenomenon. The principles of epidemiology could well find application in the field of mental illness. This has been recognized by some public health workers* and psychiatrists. The words of Haven Emerson used on another occasion[10d] are appropriate:

"Only by the most rigorous application of epidemiological methods and statistical techniques applied to preinstitutional as well as to the domiciliary and custodial groups of mental disease can we determine whether the apparent rapid increase in the incidence of mental patients . . . . . is real or apparent, and whether we are neglecting basic preventable causes deeply rooted in our present social and economic disorder, while apparently making progress in the biochemotherapy of the individual patient previously considered hopeless."

*Since this paper was first prepared, the Vital and Health Statistics Section of the Canadian Public Health Association has recorded its conviction "that further statistical studies employing epidemiological principles be made in the field of mental illness . . . . . ".

Summary

1. A detailed study was made of the numbers of admissions to Canadian Mental Institutions from 1932 to 1947 inclusive, in an attempt to describe certain aspects of the extent of mental illness in Canada.

2. The nature of the basic data precluded a satisfactory estimation of the incidence of those suffering from mental diseases. Accordingly, they were used for making estimates only of those reported mentally ill patients, together with the following rates, who for various reasons were admitted to mental hospitals for treatment and care.

3. The admissions increased as follows: *first-admissions*, males, from 3,340 to 4,602 (38%) and females, from 2,434 to 3,886 (60%); *re-admissions*, males, from 723 to 1,283 (77%) and females, 676 to 1,393 (106%).

4. The standardized admission rates (per 100,000 population) were much the same as the crude rates. They increased as follows: *first-admissions*, males, from 60.8 to 67.7 (11%) and females, from 47.6 to 58.2 (22%); *re-admissions*, males, from 13.2 to 19.0 (44%) and females, from 13.2 to 20.5 (55%).

5. Contrasts of the averages of the standardized rates for the quinquennial periods of 1933-1937, 1938-1942 and 1943-1947 for *first-admissions*, males as well as females, revealed small differences for the averages in question; for *re-admissions*, however, the differences between the averages of 1933-1937 and 1943-1947 were 2.3 for males and 4.8 for females.

6. Contrasts were made of the averages of the age-sex-specific rates (per 100,000 population) for 1943-1947 and 1933-1937. For *first-admissions*, males, the 1943-1947 averages were less than those of 1933-1937 at ages 25-64, while for females up to 64 years they were much the same. However, for males and for females 70 years and over, the 1943-1947 averages exceeded those of 1933-1937 by about 72. The *re-admission* 1943-1947 averages were greater than those of 1933-1937 for males under 35 and over 54 years, with prominent differences occurring in the age-groups 30-34 and 60 and over. For females from 15 years and over, there were similar positive differences which were generally greater than those for males and were most noticeable in the age-groups 25-44 and 55-69.

7. Evidence has been presented to show that mental illness is a major public health problem in our country needing further study from the point of view of epidemiology.

Acknowledgment

It is a pleasure to acknowledge the cooperation and assistance of the Research Division of the Department of National Health and Welfare who computed the crude, standardized and age-sex-specific rates.

REFERENCES

1. Sheldon, H. D., Am. Psychopath. Assoc. Proc., 1944, *33*: 26.
2. Dayton, N. A., New Facts on Mental Disorders. Study of 89,190 Cases. Baltimore, Md.: Charles C Thomas, 1940.
3. Goldhamer, H., and Marshall, A. W., The Frequency of Mental Disease: Long-term Trends and Present Status. Santa Monica, Calif.: The Rand Corporation, 1949.
4. Slater, E., Annals of Eugenics, 1934-35, *6*: 172.
5. Oedegaard, O., Psychiat. Quart., 1946, *20*: 381.

6. Hyde, R. W., and Chisholm, R. M., New England J. Med., 1944, *231*: 612.
7. Cohen, B. M., Tietze, C., and Green, E., Human Biol., 1939, *11*: 485.
8. Lemkau, P., Tietze, C., and Cooper, M., Ment. Hyg., 1943, *27*: 279.
9. Elkind, H. B., Am. J. Pub. Health, 1938, *28*: 245.
10. Epidemiology of Mental Disorder. Papers Presented at a Round Table at the 1949 Annual Meeting of the Milbank Memorial Fund, November 16-17, 1949. New York: Milbank Memorial Fund, 1950. (a), p. 107; (b), p. 41; (c), p. 45; (d), p. 80.
11. Cameron, D. E., Am. J. Psychiat., 1938, *95*: 567.
12. Expert Committee on Mental Health. Report on the First Session. WHO Technical Report Series No. 9. Geneva: World Health Organization, 1950. Page 24.
13. Dominion Bureau of Statistics, Department of Trade and Commerce, Health Reference Book, 1948. Ottawa: The King's Printer, 1949. Page 65.
14. Director General of Medical Services—A.M.D. 2, Statistics Section. Statistical Report (April and May 1945). Medical Data Relating to the Canadian Army.

A Case of Suspected Algal Poisoning in Manitoba

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MALADIES of aquatic origin in animals have been moderately common in Manitoba during the past fifteen years and in the great majority of instances have coincided with the occurrence of hot weather. The outbreaks varied in severity and extent from a few sick specimens which subsequently recovered to highly lethal disease, the mortality from which extended into tens of thousands.

The writers, along with many others, have had an opportunity to observe several of these outbreaks first hand, but to determine the cause has been an impossibility in all but the most recent one. All but two of the outbreaks which came to the writers' attention involved only waterfowl and shore birds and their mammalian or avian predators, and were variously suspected of being botulism poisoning, lead poisoning, alkali poisoning or were attributed to unknown causes. Certainly, the general symptoms corresponded closely with those described by Klambach and Gunderson[1] of botulism poisoning but detailed tests were not carried out. It is interesting, however, to note that Olson[2] demonstrated the presence of poisonous algae at Whitewater Lake during a mild outbreak in 1950.

Very extensive and severe outbreaks occurred in Netley Marsh at the south end of Lake Winnipeg in early August of 1939 and 1940, with lesser ones in 1938 and again in September of 1949. Similar outbreaks of varying severity occurred at Whitewater Lake in South-western Manitoba annually during the heat of summer from 1945 to 1950 inclusive. Invariably the water was stagnant and quite warm and on occasion a dense algal bloom was present. This was particularly the case, also, during an outbreak observed by one of us (McLeod) at Finncastle Lakes in Southern Alberta in August, 1938.

The two exceptional cases, both of which involved mammals, occurred in the vicinity of Lake Dauphin. The first one was reported in 1945 by Mr. E. Crozier, whose farmyard adjoins the lake about mid-way along the east shore. He stated that one very bright day in July of the previous year when the noonday temperature reached around 90 degrees F. a slight onshore wind from the south-west concentrated a very dense water bloom in a shallow bay where his farm animals usually obtained water. In the early evening an undetermined number of animals drank from this spot and within an hour a horse, several calves, two pigs and a cat were dead. The symptoms described were those of progressive muscular weak-

ness and paralysis. No other animals showed signs of sickness and it was assumed that only those which died had drunk from the lake. During the night a change of wind dispersed the water bloom and no further trouble was encountered.

The second case occurred on the west side of Lake Dauphin at Dauphin Beach on August 3, 1951. The weather in the vicinity during the day was very bright, with maximum temperatures ranging up to 90 degrees F. In the early evening a horse and nine spaniel dogs, the property of two neighboring cottagers, drank from the lake and almost immediately fell sick. Again, the symptoms were reported to be muscular weakness and paralysis and, in the case of the horse, profuse sweating. All ten animals were dead within an hour and the owners immediately reported the case to the Dauphin Detachment of the R.C.M.P. as suspected strychnine poisoning. The investigating officer very sagaciously drew attention to the intense algal bloom in the water and notified the local representatives of the Department of Health and Public Welfare who, in turn, reported to their Winnipeg office. Local residents were immediately warned of the danger of using the lake either for bathing or as a source of drinking water. Cool weather and rain over the next few days dispersed the algal bloom and no further trouble was reported.

One of the writers (McLeod), with the kind assistance of Mr. A. Diduch, Biologist, Game and Fisheries Branch, and the investigating R.C.M.P. officer, visited Lake Dauphin on August 9. The weather was again warm and bright, and during most of the day there was a light onshore breeze in the vicinity of Dauphin Beach. At 8.30 a.m. the water appeared moderately clear, with only the slightest macroscopic evidence of an algal bloom. Three stations were established at one-hundred yard intervals along the beach where the animals had drunk the previous week and samples were collected by means of a plankton net having 120 threads per inch. Samples were taken at the water's edge, 25 yards from shore and 50 yards from shore at each of the stations.

As the light intensity increased, moderately coarse masses of algae could be observed rising to the surface, where they were gradually moved shoreward by the light breeze. By 10.00 a.m. it was no longer necessary to concentrate the samples by means of a plankton net and at 3.00 p.m. the suspension had assumed the consistency of thick paint. It was dark green in color with light blue-green streaks on the surface here and there. This bloom was observed along at least three miles of the west shore and Prof. Stewart-Hay, who began a general survey of the lake that afternoon, informed us that it was evident out to a distance of two miles off the west shore.

Samples of both fresh and preserved material were examined microscopically at the Zoology Department, University of Manitoba. The three species of organisms present were tentatively identified according to Prescott[3] as *Aphanizomenon flos-aquae* (L.) Ralfs, *Anabaena flos-aquae* De Brébisson, and *Microcystis* (*Polycystis*) *aeruginosa* Keutz; emend. Elekin. They were present in the approximate proportions of 99%, 0.9% and 0.1% respectively. Samples submitted by the R.C.M.P. at the time of the outbreak were also examined and found to be identical.

It was desired to prove whether or not toxic material was present in the samples

and, if so, where it occurred—in the algae, in the water or both—and, also, what was its chemical nature. Several experiments were carried out in an effort to prove these points.

Sample: Unpreserved sample of water and algae as taken from the lake.

Animal	*Dose*	*Administered*	*Result*
White rat	1 ml.	intraperitoneally	dead within 20 hours
" "	2 ml.	orally	" " 20 "
White mouse	0.5 ml.	intraperitoneally	" " 20 "
" "	1 ml.	orally	" " 20 "

Sample: Filtrate of lake water from which the algae had been removed.

Animal	*Dose*	*Administered*	*Result*
White mouse	1 ml.	orally	negative
" "	1 ml.	"	"
" "	0.3 ml.	intraperitoneally	"
" "	0.5 ml.	"	"
" "	1 ml.	"	"
White rat	2 ml.	orally	"
" "	2 ml.	"	"
" "	1 ml.	intraperitoneally	"
" "	2 ml.	"	"

Sample: Residue of algae after filtration, resuspended in distilled water. Where indicated the algae had been frozen for 24 hours and then thawed and resuspended.

Animal	*Dose*	*Administered*	*Result*
White rat	2 ml.	orally	dead in less than 12 hours
" "	1 ml.	"	" " " " 48 "
" "	1 ml.	intraperitoneally	" " " " 12 "
" "	0.5 ml.	"	sick but recovered
White mouse	1 ml.	orally	dead in less than 12 hours
" "	1 ml. (frozen)	"	" " " " 20 "
" "	0.5 ml.	intraperitoneally	" " " " 30 "
" "	0.5 ml. (frozen)	"	" " " " 46 "
" "	0.25 ml.	"	" " " " 50 "

Sample: Residue of algae from filtration, ground in fine sand, resuspended in an equivalent amount of distilled water, filtered by means of a Seitz filter and the filtrate used.

Animal	*Dose*	*Administered*	*Result*
White mouse	0.5 ml.	intraperitoneally	dead in less than 24 hours
" "	0.25 ml.	"	" " " " 65 "
" "	0.12 ml.	"	sick (diarrhea) but survived
" "	0.5 ml.	orally	sick (diarrhea) but survived

Sample: Algal residue dried for 3 days at 37 degrees C. and resuspended in the original volume of distilled water.

Animal	*Dose*	*Administered*	*Result*
White mouse	1 ml.	intraperitoneally	dead in less than 12 hours
" "	0.3 ml.	"	sick but survived

Both the algae and the lake water were tested chemically for the presence of cyanide and copper, with negative results in both cases. The residue from filtered samples was extracted with ether and acetone and the extract passed through a column of diatomaceous earth. It produced quite definite green, yellow and brown

bands but in which band, if any, the toxic material was contained was not determined. Exposure of samples of algae to ultra-violet irradiation for four hours failed to produce any appreciable change in the potency of the toxin or in its location.

The symptoms in the experimental animals were similar to those observed by Olson (loc. cit.) but, judging from the time required to produce death, our material was of considerably lower potency than some samples reported by him. In all cases the introduction of the algae into the body was marked by a loss of equilibrium followed by a progressive paralysis. The advanced stages of the disease were always accompanied by clonic muscular spasms and impaired respiration to the extent that the animal became pronouncedly cyanotic.

The experiments reported above demonstrate that toxic material of algal origin was present at Dauphin Beach at the time when the horse and nine dogs in question drank from the lake and that this material, undoubtedly, contributed to their deaths. It has also been demonstrated that the toxic material was contained in the plants and not to any extent in the water. It is true that the toxic material might be released into the water with the disintegration of the plants but, while contained in the plant, it is quite stable and is not destroyed by air drying at 37 degrees C., freezing, or irradiation by ultra-violet light. How long it may last under natural conditions or what is its ultimate fate in nature is not known to the writers.

It is impossible to say at the moment if any one of the three species of algae found in the samples was more important in producing the algal poisoning than the other two. Howard and Berry[4] reported that *Anabaena sp.* had been responsible for the poisoning of cattle at Fraser Lake in Ontario and Olson (loc. cit.) in a very thorough summary of the literature up to 1951 cited cases where all three species found in Lake Dauphin in this instance had been involved in algal poisoning. On the basis of abundance alone, *Aphanizomenon flos-aquae* would appear to the writers to have been the most important in this case.

REFERENCES

1. Klambach, E. R., and Gunderson, M. F.: Western Duck Sickness—A Form of Botulism. US.. Dept. of Agric. Tech. Bull., May 1934.
2. Olson, T. A.: Toxic Plankton. Proc. of Interservice Training Course in Water Works Problems, School of Public Health, University of Michigan, 1951, pp. 86–95.
3. Prescott, G. W.: Algae of the Western Great Lakes Area. Cranbrook Institute of Science, Bull. No. 30, 1951.
4. Howard, N. J., and Berry, A. E.: Algal Nuisances in Surface Waters. Canad. Pub. Health J., 1933, *24*: 377.

Canadian Journal of Public Health

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REDEFINING THE FIELD OF PUBLIC HEALTH

THE RESPONSIBILITY of the central government in health matters was first recognized in Great Britain in 1848, when the General Board of Health was established. Parliament had serious doubts as to the necessity or wisdom of this action, and limited the undertakings of the board to a period of five years reluctantly extending it for an additional period of five years before discontinuing its activities. In the hundred years that have passed, public health has become recognized as one of the major responsibilities of government.

Until the turn of the century the major work of health departments related to sanitation and attempted control of communicable diseases through quarantine and isolation. Early in this century the participation of clinicians in tuberculosis programs linked public health with the medical profession in a new way. It was appreciated that tuberculosis could not be controlled by mandatory regulations and that the public must be informed about the disease and its transmission; the widespread fear of the disease had needed to be dispelled and replaced by confidence in treatment. This change of attitude has been accomplished through health education.

One of the elder statesmen in public health on this continent, Dr. Haven Emerson, whose writings are so greatly valued by students of public health, recently reviewed the achievements of public health and looked into the future[1]:

"If we accept the probability that in the next fifty years we shall move into other areas of public health effort than those in which the past half century has recorded some substantial triumphs, health education, rather than sanitary law, must undergo a great increase in depth and breadth. We can teach, but cannot enforce, dietary intelligence. We can offer advice about the balanced diet and the family food budget, but often to deaf or unwilling ears.

"There will surely be a great enlargement in the concern of management and labor with every last detail of occupational hygiene, of industrial sanitation, of the psychological analysis of job satisfactions and frustrations.

"Our ignorance of the origins of cancer and the extravagant promises of prevention by its over-optimistic devotees (who mistake early recognition and good surgical care for a program of prevention) blind us to some extent when we consider the actual productiveness of overexploitation and try to distinguish between the postponement of death from, and the

[1]Medicine as a Social Instrument: Public Health. New England J. Med., 1951, *244*: 289

prevention of, cancer. We know some of the causes of preventable cancer, and may consider all occupational cancer preventable, but much of the hysterical promulgation among school children of so-called 'cancer education' seems to violate many of the principles of good education. Rarely has fear been safely used as a constructive force to motivate hygienic habits.

"For any productive effect upon the cardiovascular, the arteriosclerotic and the senescent factors of disability and death in the later decades, we must await a volume of new knowledge, as yet but distantly seen on the research horizon.

"For a competent attack on the problems of prevention in fields of mental health, we need an almost totally new body of science, as well as a more wholesome philosophy and ethic—something so nearly akin to a widespread practice of Christianity that one wonders at the assurance of the many who offer solutions to these problems. Good personal relations and emotional maturity will hardly be achieved at a level of sweetness and light by any example or method of teaching now in practice in official or voluntary health agencies."

In these words Dr. Emerson emphasizes the fundamental importance of health education in the work of the health department. He indicates the great enlargement of the field of environmental sanitation, relating it to every aspect of occupational hygiene. The chronic diseases and diseases associated with an aging population present a challenge to health departments. Although, as he states, public health is not in the possession of knowledge that would make effective programs possible, certain services can be rendered and the public informed of present facts, thus demonstrating the health department's interest in these great problems.

The provision of adequate housing is of vital concern to the health department. The relating of community clinic and hospital facilities, and the co-ordination of existing facilities for medical care, are problems that face the health department. As accidents constitute one of the major causes of death and disability, accident prevention is a logical field of activity for many health departments. The rehabilitation of the crippled and disabled is another field in which the department can give assistance.

The public health field *is* changing. There are no ready solutions for the problems; they call for pioneer effort. The work of the medical officer of health today presents a unique opportunity for young graduates in medicine who have vision and a desire to expand the boundaries of public health. Progress in the greater part of the health department's program can be achieved only through teamwork with the practising physicians. The closest relationship must be established between the practising physicians and the health department. Without medical leadership this relationship cannot be effective. The medical officer of health is a specialist in public health and, with the medical, dental and nursing professions and the social-welfare agencies, he can bring the resources of the community to bear on its health problems. The serious shortage of medical officers of health on this continent is threatening to limit the extension of public health services; today scarcely more than 50 per cent of the population of Canada is served by full-time medical officers of health. The importance of salaries and terms of employment has been fully recognized, but it has become increasingly apparent that the basic need in recruitment is a new vision of the medical services which may be provided by physicians in public health. A new challenge to medical leadership will follow a redefining of the field of public health in the light of today's needs.

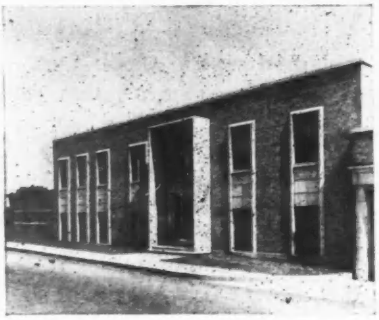
Those who accept it will find the same satisfactions that have been the reward of those who have built the health departments of today. Again the words of Dr. Emerson, in the address already referred to, express the confidence which is ours in the work of health departments:

"The health department of local civil government, as we have made it grow and have used it as a symbol of science—free and effective for all people and any nation—offers more on its record of past performance, and promises higher returns for at least the remainder of the twentieth century, than any other instrument of collective social effort."

THE JAMES ROBERTS HEALTH CENTRE, HAMILTON, ONTARIO

ON APRIL 30 a dream of the Hamilton Department of Health came true. The new East End Health Centre was officially opened by the Minister of Health for Ontario, the Honourable Mackinnon Phillips. It is named the James Roberts Health Centre after the late Dr. Roberts, who was Medical Officer of Health of Hamilton from 1905 to 1940. His accomplishments in the field of public health need no elaboration in this journal. Hamilton is pleased to be able to perpetuate his memory by this recognition.

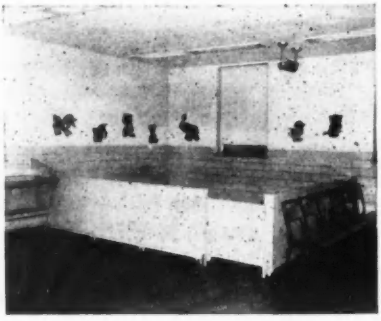
Nurses' office. Green and buff floors. Aquamarine walls.



The James Roberts Health Centre.

When it was learned some five or six years ago that a building was to be erected in the east end of our rapidly growing city to accommodate a section of the police and fire departments, the suggestion was made that an addition be provided to house a branch of the health department with office and clinic facilities. The suggestion was accepted. Excavation for the composite building was finally begun in the fall of 1950. Many wearisome and vexatious delays occurred, so that construction took over a year to complete, but we now have a centre of which we are proud.

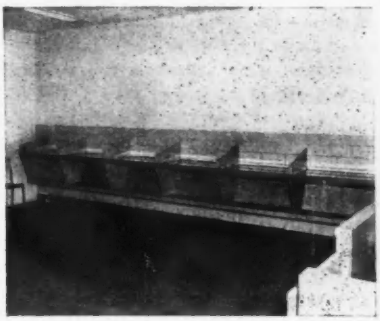
The accompanying illustrations will explain far better than words the layout of the building. The structure is of yellow pressed brick and stone. The basement floor is three feet below grade at the front of the building and a little less than three feet at the rear. It is built to carry another floor when the need arises. Most of the partitions are of insulated steel panels that can be removed so that we may at any time alter the size and shape of most of the rooms at will. The total floor space is about 4,500 square feet.



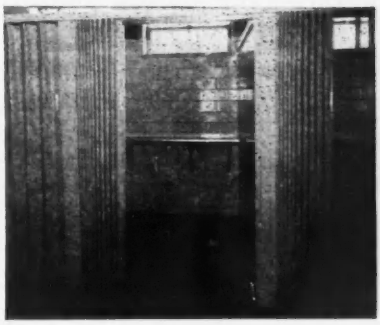
Toddlers' play-pen rolls against inner wall. Terrazo floors (radiant heat), yellow walls.

The stairwell, basement walls and upstairs hall are of ceramic tile, light buff in colour, to a height of about four feet. The floors are of reddish terrazo and asphalt tile. The rooms are painted in different colours chosen to harmonize with the floor colours.

Among the features which have been incorporated are a baby ramp at the rear which leads to a parking space for buggies; a play pen for toddlers, which may be rolled up against the walls; a dressing shelf for babies, with bins for clothing; drop shelves in the dressing cubicles for undressing babies who may have colds, etc.; and folding doors on the dressing cubicles. Sterilamps are installed in all clinic rooms; the ceilings are sound-resistant; and radiant heating and air conditioning are provided throughout. There is a three-car garage.



Shelves for undressing babies. Bunks for clothes underneath.



Prenatal dressing cubicles (3). Shelves drop.

Special consideration has been given to the provision of adequate plumbing and cupboard space, as well as filing space. The doors on the coat cupboard in the nurses' lunch and recreation room, as well as those on the medical officer's coat cupboard, are the sliding panel type.

Wall plugs are installed wherever they might be needed. The nurses' recreation room and the waiting room may be set up for the showing of films without difficulty or special preparation and have already been used for quite a few meetings. The kitchen is proving an asset in this connection.

The building is headquarters for seventeen nurses, two supervisors, and a medical officer, as well as housing one of the permanent dental clinics. It is bright and clean and should fill our needs in the East End for some time. It fills a long-felt requirement.

L. A. CLARKE, M.B., D.P.H.,
Medical Officer of Health,
Hamilton.

Ontario Public Health Association
Third Annual Meeting
Royal York Hotel, Toronto
NOVEMBER 3 AND 4, 1952

MONDAY, NOVEMBER 3

9.00 a.m. — Registration. Every delegate is expected to register. Fee: $2.00 for members; $4.00 for non-members.

10.00 a.m. — Minister's Conference for Ontario Health Officers.

12.30 p.m. — Luncheon. Speaker: The Honourable Mackinnon Phillips, M.D., Minister of Health for the Province of Ontario.

2.30 p.m. — Section Meetings:
- Health Officers
- Public Health Nursing
- Public Health Dentists (interim)
- Public Health Veterinarians
- Environmental Hygiene

8.00 p.m. — Meeting of the Board of Directors, Ontario Public Health Association.

— Meeting, Ontario Branch, Canadian Institute of Sanitary Inspectors.

TUESDAY, NOVEMBER 4

9.30 a.m. — General Session.

12.30 p.m. — Luncheon and Business Meeting.

2.30 p.m. — Section Meetings:
- Health Officers, Nurses, and Dentists (combined session).
- Veterinarians and Sanitary Inspectors (combined session).

WEDNESDAY, NOVEMBER 5

Morning — Full-time Health Officers.

Afternoon — Committee on Health Records.

Minister's Conference

Members who wish to forward questions on public health problems for discussion at the Minister's Conference on Monday, November 3, should send them to Dr. J. T. Phair, Deputy Minister of Health, Parliament Buildings, Toronto 2, *not later than Friday, October 17th.*

HOTEL RESERVATIONS

A limited number of double rooms are available at the Royal York Hotel. Reservations must be made through the Association, and not direct with the hotel. Please use the application form on page 2 of this issue.

IMPORTANT: Single rooms are not available at the Royal York. Please arrange to share a twin bedroom with another delegate. If you wish a single room, it will be necessary for you to make your own reservation at another hotel.

Requests for reservations at the Royal York must be received by the Association not later than Monday, October 20th.

NEWS

British Columbia

Dr. Lawrence E. Ranta has resigned as professor and head of the Department of Public Health and assistant dean of the Faculty of Medicine, University of British Columbia. He has been appointed medical director of the Vancouver General Hospital, which is the principal teaching hospital of the new medical school in British Columbia. Dr. Ranta has been succeeded in the Department of Public Health by Dr. James M. Mather, formerly director of the Halton County Health Unit at Milton, Ontario.

Alberta

Friends of Dr. Malcolm R. Bow in the public health field in Canada and the United States will be sorry to learn of his retirement, effective July 1, as Deputy Minister of Health for the Province of Alberta.

Dr. Bow has been very active in public health ever since he graduated in medicine from Queen's University in 1911. His influence has been felt across Canada during the period when the public health program was developing from its beginnings into a full-fledged service to the community.

Dr. Bow moved west after graduation, to become assistant provincial bacteriologist for Saskatchewan. A year later he became the first full-time medical officer of health for the City of Regina, an office he held for the next fifteen years. During the last six years of this appointment he was also medical superintendent of the Regina General Hospital. This wide experience in a rapidly growing city made him a very suitable choice as Deputy Minister of Health for Alberta when that position became vacant in 1927. In addition he became chairman of the Provincial Board of Health and Associate Professor of Public Health at the University of Alberta.

At the recent annual meeting of the Canadian Public Health Association in Winnipeg, Dr. Bow was presented with honorary life membership in that Association (of which he was president in 1938) and also life membership in the Conference of State and Provincial Health Authorities of North America.

The employees of the Alberta Department of Public Health recently held a dinner in honour of Dr. Bow and presented him with a purse. Dr. G. R. Davison, as master of ceremonies, likened Dr. Bow to a teacher leading those over whom he had direction and spoke of his retirement as a promotion to the position of professor emeritus. Carrying this simile further, the present employees are students and the ex-employees become graduates. In support of this idea, one of the former employees made the following statement in a letter which was read at the dinner: "Dr. Bow's greatness comes not from personal ambition, but from the desire to give each and every member of his staff the opportunity to make their greatest contribution, and the encouragement to grow and develop to every inch of their ability."

That a man with Dr. Bow's qualifications should disappear from public health because of a retirement rule seems unprofitable and unnecessary. It is pleasing that he has been asked by the Northwest Territory Administration to make a survey in the near future of the hospitals and the medical and health services of the Yukon.

Saskatchewan

Preliminary to the fluoridation of the communal water supply in Moose Jaw, a city of 25,000, a survey involving 1,000 children from six to fourteen years of age was conducted recently by the Division of Dental Health. The results of this survey revealed the constantly deteriorating state of children's dental health. The Division is in accord with the opinion of other official dental groups in Canada that the caries problem cannot be solved solely by treatment methods—that there is definite need for a preventive approach to this problem. As part of a general dental health education campaign, the Dental Health Division is organizing a mobile topical fluoride team of dental hygienists to operate a purely preventive dental service for younger children in the province's health regions. In addition to the fluoride program, instruction will be given in oral hygiene and the restriction of foods

known to induce susceptibility to caries.

THROUGH FUNDS made available for professional training under the National Health Grant, three bursaries for a two-year course in dental hygiene are being awarded again this year by the Division of Dental Health. Three dental hygienists now in training will complete their course in 1953.

A TWO-WEEK TRAINING SCHOOL for sanitary inspectors was conducted recently at the Provincial Health Building in Regina by the Sanitation Division, with seven trainees in attendance. The course included bacteriology, a study of communicable diseases, food technology, water and milk supplies, sewage and waste disposal, and insect and rodent control.

* * *

HEALTH EDUCATION EXECUTIVES have been working closely with Home and School Associations, emphasizing parent-child relationships, school housekeeping, and school health studies. In June, Harold Lobb, B.A., M.Ed., assistant director of health education, was elected health convener of the Saskatchewan Federation of Home and School. Christian Smith, director of health education, recently attended the annual meeting in Banff of the Canadian Home and School and Parent-Teacher Federation and led a discussion on community influences in education for citizenship.

* * *

J. G. Schaeffer, director of the Sanitation Division, has been elected president of the Saskatchewan Association of Professional Engineers and chairman of the Saskatchewan Branch of the Engineering Institute of Canada.

* * *

Robert Comstock, assistant engineer with the Sanitation Division, has completed a course leading to the degree of Master of Applied Science at Johns Hopkins University in Baltimore, Md.

* * *

Miss Rowena Hawkings, M.A., health educator on the headquarters staff of the Division of Health Education, was one of the three delegates from Saskatchewan to attend the twenty-second Institute for Education by Radio-Television held at Columbus, Ohio, in April. At the health education work-study group, Miss Hawkings outlined the work being done in health education in Saskatchewan. According to the impression she received, radio as a medium of health education appears to be playing a more important role in Canada than in the United States.

Manitoba

MISS ELIZABETH A. RUSSELL, director of public health nursing for the Manitoba Department of Health and Public Welfare, has been honored with life membership in the Canadian Public Health Association. The presentation was made at the fortieth annual meeting of the Association, held in Winnipeg in mid-June. Miss Russell established the first provincial public health nursing service in the world in 1917. She has been a member of the Canadian Public Health Association for thirty-three years.

DR. ERNEST MASTROMATTEO, D.P.H., has resigned his position as medical director of the Virden Local Health Unit, Department of Health and Public Welfare. He has accepted a post with the Division of Industrial Hygiene, Ontario Department of Health.

DR. JAN BEATON, a 1951 graduate of the University of Manitoba, has been named successor to Dr. Mastromatteo as director of the Virden Local Health Unit. Dr. Beaton will attend the School of Hygiene, University of Toronto, next fall for the course leading to the Diploma in Public Health.

Ontario

THE ONTARIO Department of Health recently was host to a public health mission from India and Pakistan. The visitors were the first public health mission to come to Canada under the technical co-operation part of the Colombo plan.

They inspected the facilities of the department and conferred with the Hon. Mackinnon Phillips, Minister of Health, and other officials. They also inspected municipal health services in Toronto and visited various hospitals and health and research centres. Trips were made to Niagara Falls and the St. Catharines-Lincoln Health Unit.

Those in the party included Lieut.-Col. T. C. Puri, deputy director-general of health services, New Delhi, India; Dr. B. C. Das-Gupta, director of health services, West Bengal, Calcutta, India; Dr. A. N. Das, director of health services, Uttar Pradesh, Lucknow, India; Dr. K. S. Viswanathan, director of public health, Madras, India; and Col. S. M. H. Mallick, director of health services, Punjab, Pakistan.